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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,968	05/05/2005	Hiroshi Setoguchi	MAT-8692US	7894
23122	7590	10/10/2007		
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			EXAMINER WALFORD, NATALIE K	
			ART UNIT	PAPER NUMBER
			2879	
			MAIL DATE	DELIVERY MODE
			10/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/533,968

Applicant(s)

SETOGUCHI ET AL.

Examiner

Natalie K. Walford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4,6 and 8 is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/05, 6/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Objections*

Claims 1-8 are objected to because of the following informalities:

Regarding claims 1-8, all variables should have defined limits or inequalities (i.e. "a" and "y").

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuta et al. (US PUB 2003/0173542).

Regarding claim 1, Fukuta discloses a plasma display device provided with a plasma display panel (item 100) comprising a plurality of columns (item 29) of discharge cells having one of a single color and multiple colors (items R, G, and B), and a phosphor layer (item 28)

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disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays, wherein the phosphor layer includes a green color phosphor comprising a phosphor material defined by a general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) (paragraph 41).

Regarding claim 5, Fukuta discloses the plasma display device according to claim 1, wherein a value "x" in the general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) is within a range of  $0.01 \leq x \leq 0.06$  (paragraph 41).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US PUB 2003/0173542) in view of Rao (US 6,004,481).

Regarding claim 4, Fukuta discloses a plasma display device provided with a plasma display panel (item 100) comprising a plurality of columns (item 29) of discharge cells having one of a single color and multiple colors (items R, G, and B), and a phosphor layer (item 28) disposed in each of the discharge cells, the phosphor layer having a color corresponding to the each discharge cell for emitting light when excited by ultraviolet rays, wherein the phosphor layer includes a green color phosphor comprising a mixture of a phosphor material defined by a general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) (paragraph

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41), but does not expressly disclose that another phosphor material defined by a general formula of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_5O_{12}:Tb_y$ , as claimed by Applicant. Rao is cited to show that a plasma display panel may have a phosphor material with the defined by a general formula of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_5O_{12}:Tb_y$  (column 2, lines 12). Rao teaches that this phosphor can contribute to high brightness, shorter persistence, color purity, better stability, and long life, which all improve the performance of the display (column 3, lines 42-46).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fukuta's invention to include another phosphor material defined by a general formula of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_5O_{12}:Tb_y$  as suggested by Rao for improving the performance of the display.

Regarding claim 7, the combined reference of Fukuta and Rao disclose the plasma display device according to claim 3, wherein a value "x" in the general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) is within a range of  $0.01 \leq x \leq 0.06$  (paragraph 41).

#### *Allowable Subject Matter*

Claims 2, 4, 6, and 8 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 2, specifically for the limitation of a green color phosphor comprising a mixture of a phosphor material defined by a general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) and one of phosphor materials

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defined by general formulae of  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Tb_y$ , and  $(Y_{1-a-y}Gd_a)(Ga_{1-x}Al_x)_3(BO_3)_4:Tb_y,Ce_y$  in combination with other claimed features of the present claimed invention.

Regarding claim 6, claim 6 is allowable for the reasons given in claim 2 because of their dependency status from claim 2.

Regarding claim 4, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 4, specifically for the limitation of a green color phosphor comprising a mixture of a phosphor material defined by a general formula of  $M_{1-x}Al_{12}O_{19}:Mn_x$  (where "M" denotes one of Ca, Sr, Eu and Zn) and another phosphor material defined by a general formula of  $(Y_{1-a-y}Gd_a)(BO_3)_4:Tb_y$  in combination with other claimed features of the present claimed invention.

Regarding claim 8, claim 8 is allowable for the reasons given in claim 4 because of their dependency status from claim 4.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rao et al. (US 6,423,248) is cited to show a method of making green emitting phosphors.

Miyamae et al. (US PUB 2006/0138974) is cited to show a plasma display device.

Tanaka et al. (US 7,268,492) is cited to show a plasma display device.

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***Contact Information***

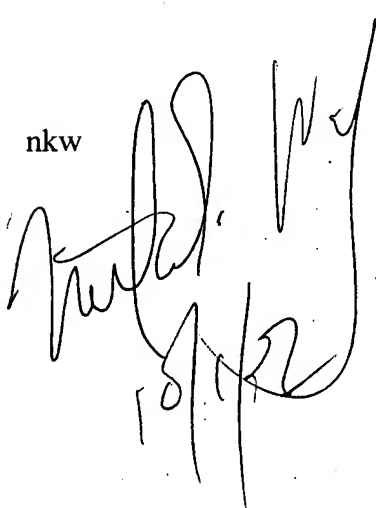
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012.

The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nkW



Handwritten signature of Natalie K. Walford, dated 10/1/02.

Sikha Roy  
SIKHA ROY  
PRIMARY PATENT EXAMINER  
PRIMARY PATENT EXAMINER